NON-PUBLIC?: N
ACCESSION #: 8812290015
LICENSEE EVENT REPORT (LER)

FACILITY NAME: BIG ROCK POINT NUCLEAR PLANT PAGE: 1 OF 3

DOCKET NUMBER: 05000155

TITLE: Reactor Trip Resulting from Turbine Control Valve Failure
EVENT DATE: 11/21/88 LER #: 88-009-00 REPORT DATE: 12/20/88

OPERATING MODE: N POWER LEVEL: 093

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: R. J. Alexander
Technical Engineer TELEPHONE: 616-547-6537

COMPONENT FAILURE DESCRIPTION:
CAUSE: B SYSTEM: TA COMPONENT: CON MANUFACTURER: G080
REPORTABLE TO NPRDS: NO

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On November 21, 1988 the plant was in steady-state operation at 93% power. At 2022 hours, control room operators heard a loud noise from the turbine building and immediately thereafter a reactor trip occurred on high power. All control rods inserted and plant cooldown commenced using the main condenser. No other safety systems were challenged during the trip. Subsequent investigation determined that a connecting rod on the turbine control valves failed causing valve closure (the loud noise). Loss of the turbine resulted in reactor pressure increase and reduction in void content causing reactor power increase to the trip setpoint.

Following replacement of the connecting rod and testing, the plant was returned to service on November 24, 1988.

END OF ABSTRACT

Description

On November 21, 1988 the plant was in steady-state operation at 93% power with all safety systems in service. At 2022 hours, control room operators heard a loud noise from the turbine building and immediately thereafter control room alarms (IR) and indications were received indicating that a reactor trip had occurred on high flux. All control rods (AA) inserted, the turbine generator (TG) tripped and plant cooldown commenced using the main condenser (SG). No other safety systems were challenged during the trip. Plant was cooled to approximately 250 psig and the shutdown cooling system (BO) was placed in service.

After repairs to the turbine admission valves (FCV) and testing activities were complete, plant start-up commenced on November 24, 1988 at 0037 hours.

Cause

Subsequent investigation determined that a connecting rod (CON) on the turbine admission valve linkage failed causing prompt closure of the admission valves (the loud noise). The prompt loss of the turbine resulted in a reactor pressure increase and reduction in core void content. These reactivity effects caused a reactor flux increase to the trip setpoint resulting in Reactor Protection System (JC) actuation.

Corrective Actions Taken

A replacement connecting rod was installed in the turbine admission valve linkage and controls tested satisfactory. Additional turbine control features and protection circuits were also tested to insure no other contributing causes were left undetected.

Corrective Actions to Prevent Recurrence

1. The failed connecting rod will be analyzed to determine cause of the fracture.

2. The results will be used to determine if material and fabrication technique are suitable for long term operation or if a scheduled replacement interval is needed.

Safety Assessment

Loss of turbine generator resulting in a pressure and resultant flux transient within the reactor is a recognized occurrence in the Final Safety Hazards Report

(12.5.6.3). This analyzed equipment malfunction concludes that the reactor will trip on high flux. During the event all control rods inserted to maintain parameters within the design basis. Additional safety systems were not required to mitigate the transients.

ATTACHMENT 1 TO 8812290015 PAGE 1 OF 1

Consumers Power

POWERING MICHIGAN'S PROGRESS

General Offices: 1945 West Parnall Road, Jackson, MI 49201, (517) 788-0550

December 20, 1988

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT - LICENSEE EVENT REPORT
88-009 - REACTOR TRIP RESULTING FROM TURBINE CONTROL VALVE FAILURE

Licensee Event Report (LER) 88-009 (Reactor Trip Resulting from Turbine Control Valve Failure) is attached. This event is reportable to the NRC per 10CFR50.73(a)(2)(iv).

Kenneth E Marbaugh
Plant Licensing Engineer

CC Administrator, Region III, NRC
NRC Resident Inspector - Big Rock Point

Attachment

OC1288-0239-NL02

*** END OF DOCUMENT ***